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ABSTRACT

The Buffalo career education project is presented in two parts, the final report and the summary evaluation. The components of the program described and analyzed in the report are: (1) infusion of career concepts into the existing curriculum; (2) vocational skill training for entry jobs; (3) business, labor, and industry contribution to career education goals; (4) career development programs to help students make decisions; and (5) efforts to use home and family structure in the occupational society. While success in each component varied according to the particular school and counselor, all components were incorporated into the programs of each school and an overall satisfactory stage of development was reached. The summary evaluation considers the Buffalo Career Education Project for its three years of existence, from autumn 1972 through spring 1975. Holland's theory of vocational choice was used as the basis for much of the data collection, with a pretest/posttest approach to evaluation. Tabulated results of the tests are appended, showing a significant increase in student knowledge about vocations and specific jobs. (Author/HP)

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FINAL REPORT

Project No. V261012
Grant No. OEG-0-72-5148

Career Education Project

Exemplary Project in Vocational Education
Conducted Under
Part D of Public Law 90-576

VT-102-552

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Ronald F. Callahan
Buffalo Public School System
Room 808, City Hall
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September, 1972
August, 1975

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The Project reported herein was performed pursuant to a grant with the Bureau of Adult, Vocational, and Technical Education, Office of Education, U.S. Department of Health, Education and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

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INTRODUCTION

According to Dr. Kenneth B. Hoyt, career education can be defined as the total effort of public education and the community to help all individuals become familiar with the value of a work oriented society, to integrate those values into their personal value structure, and to implement those values in their lives in ways that make work possible, meaningful, and satisfying to each individual.

Inherent in this definition is an assumption that "work values" encompasses a variety of work motivation and the success of career education is seen as dependent on the quality and quantity of five components, each of which must be closely integrated with the other four. These five components include:

1.) Efforts of classroom teachers and counselors to emphasize the career implications of the substantive content they seek to help students learn.

2.) Vocational skill training that will provide students with specific competencies required for successful entry into the occupational world.

3.) Efforts of business, labor, and industry to contribute actively to the goals of career education, including the provision of observational, work experience, and work-study opportunities for students and for those who educate students.

4.) Comprehensive programs of career development aimed at helping students in the decision-making process while protecting individual freedom of choice.

5.) Efforts to recognize and capitalize on the significant ways in which the home and family structure serve as an influence on and are influenced by the occupational society.

It is through these five components that the Buffalo Career Education Project has tried to function in the past three years. Success in each of the five components has varied according to the particular school and the counselor in charge of the operation at that school. To a greater or less degree, however, each of the five components has been incorporated into the overall functioning of the programs in each of the projects' schools.

Our career program was centered around the school counselor who became the pivotal person in the developmental process of the school based career educational program. The major developmental components of our career education program included skills development, attitudes and information. The first includes psychomotor skills and interpersonal skills, the second includes areas such as punctuality, cooperativeness, responsibility and the worth and dignity of work while the third includes information about jobs and, lastly, a general information base provided typically by regular school subjects.

Thus, the counselor role based on the "3C" model has three basic premises. First, it is assumed that the counselor's activities can be grouped under three general topics, counseling, consultation, and coordination.

The first C, counseling, can be defined as a process which involves the counselor in providing direct assistance to a student. Consultation, the second C, is a less intense process in which a student is helped indirectly, usually through a third party such as a parent or teacher. Coordination, the third C, usually involves the gathering together of all available resources in a concerted effort to assist a large number of students.

The flexibility of the "3C" model allowed for adaptation in the elementary, middle, and secondary schools and also allowed the counselor the freedom to determine the allocation of his time and efforts based upon the needs of the participants in the programs within the school and community.

As was stated in a previous report, two parallel objectives were sought for each child in the project:

1.) An ever more mature appreciation of the personal and social implications of becoming a worker.

2.) An increased understanding of the specific tasks required for gaining and maintaining employment.

In achieving these objectives we find that the five components of a career program are interwoven in the completion of these two objectives.

The Career Education Project was established at West Hertel Middle School, Southside Jr. High School and Clinton Jr. High School. These schools functioned as career centers. Career areas were also established at the various elementary feeder schools in addition to one other middle school. The project patterened in accordance to the New York State Plan for Occupational Education as outlined on page 9 of the Statement of Policy and Proposed Action by the Regents of the University of the State of New York, proposed to ensure the development of students so that by age 9, the student understood the concept of work; by age 12, the student was

familiar with the broad families of occupations; by age 15, the student was able to assess his own potential and to participate in making informed decisions regarding his immediate educational and occupational goals.

Career education teams consisting of teachers of industrial arts, home economics, business education, art and music as well as academic areas were established in each Career Education Resource Center. These teams served as consultants to teachers to incorporate field trips and assist students and teachers in the utilization of materials and equipment available in the Career Education Resource Centers. They also developed a systematic program to provide information and counseling which assisted young people to take full advantage of the strong diversified career education opportunities available in the Buffalo schools at the secondary level and post-secondary educational programs available in the Buffalo community.

A continuous developmental education program, instituted at the kindergarten level, which incorporated world of work concepts and attitudes into the regular instructional program and strengthened and integrated exploratory and pre-vocational programs formed the basis for, hopefully, better informed career decisions at the end of the 8th or 9th grade.

Consultants from business and industry, adult education and manpower agencies and post-secondary educational institutions assisted the administrators, practitioners and students to broaden the base for career education and planned appropriate activities regarding world of work attitudes, requirements and opportunities.

To simplify the major section of the final report, I am dividing it into these five components which will, in turn, be divided into two sections, elementary (K-6) and early secondary (5-8, 7-10). At each level I will discuss two major categories; methods and/or techniques and materials and/or instruments used to implement the project. I will also indicate under methods and/or techniques, which ones are predominately counseling (C1), consultation (C2), or coordination (C3).

Beginning the major section of the report will be a list of the results and accomplishments of the Project in summary form.

SUMMARY

RESULTS AND ACCOMPLISHMENTS OF THE PROJECT

A listing of project accomplishments are as follows:

1.) The establishment of three career guidance centers at our early secondary schools.

2.) The establishment of career education satellites in three elementary schools under each center.

3.) The establishment of career projects in one middle school and two elementary schools during the last year of the project.

4.) The providing of in-service programs for various elementary, early secondary and secondary schools concerning career education programs and activities. Many of the counselors and teachers in the project schools participated by giving demonstrations, conducting panel discussions, answering questions, etc.

5.) The implementation of various programs of staff in-service at the project schools on topics such as behavioral modification, career education, learning disabilities and self-concept and ego development.

6.) The incorporation of world of work concepts into regular instructional programs by demonstrating career educational materials and providing same to teachers.

7.) The development of a K-10 career education instructional guide for use by counselors and teachers. The guide is composed of lesson plans, unit plans and guidance activities that have been field tested and proven effective in the learning situations.

8.) The establishment of a credit course for high school students in career development. The development of a career exploration activity guide for use in a career course when taught in an industrial arts setting (see guide).

9.) The development of an all-day or half-day group session on career development emphasizing self-concepts, value clarification and the decision-making process. The utilization of this process, in part or in total, is a basis for a new direction in counseling activities.

10.) The providing of in-service programs for various school districts outside the Buffalo system stressing the developed activities and strategies of the Buffalo project.

11.) The utilization of audio-visual materials as well as other written and programmed guides on career concepts which will be available to teachers or counselors in the Buffalo system through a central service.

12.) Stimulated the participation of the Buffalo School System with the Niagara Frontier Industry and Education Council which will provide a closer and more coordinated source for business and industry contacts in comprehensive career programs.

13.) The providing of personnel for their expertise in the development and operation of future comprehensive high schools in the Buffalo system. One comprehensive high school being in the planning stage now.

14.) The establishment of an Educational Advisory Committee and a Vocational Advisory Committee.

15.) The development in many areas of an expanded curriculum within the individual school setting. Examples such as the Token Economy Store are treated in this report.

16.) Through field trips, role models, group guidance and group counseling, career weeks, school employment services, behavioral modification programs, simulated work experience programs, instructional materials, and role playing sessions, counselors and teachers helped students to understand the concept of work, appreciate the value of work and the worker, develop an awareness of their own abilities, interests and aptitudes in relation to various occupations and increased students' knowledge of diversified career educational opportunities.

FIVE COMPONENTS - DESCRIPTION

Under the first component where classroom teachers were involved in the infusion of career concepts within their subject area, there were many indications of success in the elementary K-6 level. The school based programs, which fall under that consultation process, are explained briefly.

School Employment Service - Counselors and teachers worked together in creating job titles, application forms, job requirements, interviewing and selection teams, on-the-job counseling programs, and reward systems. The school employment service provided a close simulation to the real world of employment and world of work. Qualifications, interpersonal skills, job performance, and attitudes were all integral parts of this activity.

Token Economy Store - This strategy involved the counselor organizing a toy store and token system with the teachers. Students worked in the classroom for the tokens and when enough were saved, cashed them in for an article or toy from the store. Through the effort of teachers and the counselors there was an increased pride in schoolwork and a need on the part of students for social reward.

Curriculum Development - Counselors and teachers consulted during in-service sessions and on a weekly or bi-weekly basis to devise ways of incorporating career materials into existing courses of study and syllabi. The approach was one of integrated career experiences and activities into the existing curriculum. Counselors have held school based in-services on the use of instructional materials purchased through our project. They demonstrated the materials in the classroom and set up the organization for distribution of the materials to teachers on request.

Over and above attempting to infuse career education into the existing curriculum, counselors have used traditional holiday activities, occasions, and ceremonial weeks to infuse career awareness concepts into what might be termed the expanded curriculum. Included in these activities would be such things as Black History Week, school musicals, art contests, school newspapers, ecology projects, career cluster weeks and the like.

In the audio-visual area, educational television programs such as Inside Out, Whatcha Gonna Do, Bread and Butterflies were used as a supplement to career films and filmstrips. The processing of the subject matter presented was the main value of the series rather than the content itself.

There has been a variety of packaged materials used in the K-6 area from such publishers as Science Research Associates, Scholastic Incorporated and Guidance Associates. We tried to use materials that related to the whole process of career development and life style with variables such as decision-making, goal-selection and personal assessment.

In the early secondary 7-10 level, there also has been infusion of career concepts within the subject matter content.

To develop the concepts of production and distribution and the interdependence of workers, counselors worked closely with the Industrial Arts teachers. Students worked in teams and decided on products to be made and assigned work roles, i.e. promotion, manufacturing, sales, etc. Sixth grade elementary students teamed with seventh grade junior high school students in the project schools to make trivets, bookends and other products.

Counselors assisted by video taping the production line at work, purchasing needed materials, handling intraschool communications and arranging for the teams to present at Buffalo's Main Place Mall and the New York State Industrial Arts Convention in Niagara Falls.

Other non-academic teachers in Home Economics, art, and business as well as certain academic teachers with the use of audio-visual aids and materials used a combination of infusion techniques and other approaches to explore career clusters and related activities.

Under the component of career development in the decision-making process the counseling factor has a great significance in both the elementary and early secondary areas.

In creating an awareness of the self, the family, the peer group, the immediate school community, the value and diversity of work roles within groups, the interdependence of workers, pride and appreciation of work well done, there is involved the formation of a decision-making process. This is instrumental and necessary for everyone to be able to do in order to plan and implement a career choice and life style that will provide a secure and happy existence for the person as well as the family.

All twelve elementary counselors have met regularly with small groups of students (6-10) for the purpose of discussing values in society, the meaning of work, and work roles in the home, school and in the community. These sessions were on-going with students and counselors meeting usually three or four times a week for eight to ten weeks per group.

There was much use of value clarification/career exploration games. Activities such as Building a Society Game, Building a City Game, Career Square Puzzle Game, Value Career Hierarchy, Career "Card" Game, Square Puzzle, etc. Decision-making by rank ordering and group consensus forced interaction and dialogue between the participants and they were able to share ideas, learn of other's values and eventually to work in a group.

Referrals to counselors on an individual basis come from administration, teachers, parents or on a self-referral basis.

The nature of most of the referrals was not directly career oriented, but rather directly associated with either a school adjustment problem, i.e. underachiever or peer group social problems. Indirectly, any adjustment the child can make in his behavior pattern can be an overall factor in positive decision-making.

In one early secondary school there was much success in an all-day group guidance project which highlighted activities centering on self-awareness, career structure, interpersonal relationships, attitudes and values. These groups met for the complete day and it not only served as an orientation program for future career development but served as a career development process within itself.

A third component, which falls under the coordination element, concerns the efforts of business, labor and industry to contribute actively to the goals of career education.

Much of the counselor's time in the beginning of the program was spent in coordinating school and community activities which revolved around career orientation and awareness. As the program continued, teachers, active in our program, began to contact and schedule role models themselves or to set up field trips with the assistance of the counselor who provided vast amounts of resources and readiness materials for the various programs. This would include items such as "guided questions for guest role models" to specific content material in such fields as health, business and manufacturing.

However, counselors still worked very closely with the teachers in the presentations by the role models. For small group presentations, the counselor would conduct a survey in order to assess areas of interest. Then the resource people from that specific world of work would interact with those student groups by explaining their jobs, discussing their preparation for the job and most important, talking freely about their life style and values as regards work, leisure time, family role, etc. The role models who were most successful seemed to be the ones most child-like and open about their job role, family role, values, etc. There were many female role models and minority group role models invited to talk to the students so that there would be eventually a breakdown in role stereotyping which still is very pronounced in today's world.

We sought role models' contacts in a variety of ways. Chamber of Commerce and National Alliance of Businessmen speaker lists were two sources. By sending form letters to the students' homes requesting participation, many parents and relatives offered their services as resource people. Contacts were made through teachers, friends, relatives and by counselors phoning or writing to individual businesses, industries and agencies. We had representation from each of the fifteen job clusters as defined by the U. S. Office of Education.

Field trips held in conjunction with visits to the schools by role models or as an activity by itself presented a very clarifying picture of life on the job. Walking trips as well as bus trips and teachers' and counselors' automobiles were used for transportation. This activity was coordinated with units of study conducted in the classroom.

In the early/secondary schools the use of role models and field trips were an important part of the career activities. Career weeks and career days, which emphasized guest role models in every career cluster and which gave the students the opportunity to interact with many different groups, were highly successful.

Some contacts such as Project Business through the junior achievement program not only provided career awareness through field trips but also provided role models who worked in a classroom situation as an on-going situation with the regular classroom teacher.

Other areas of business such as the banking industry provided a simulated training session on a weekly basis with a different group of students each time. Such activities as mock interviews, specific training devices, and value indicators were used in order to give the students a realistic picture of this world of work area.

Under the components of vocational skill building and decision-making, counselors coordinated articulation programs for the incoming fifth/seventh graders and outgoing eighth/ninth graders. It was arranged for project feeder school counselors to bring these graduates to the project center schools and spend a day with a "big brother" going through the day on the latter's schedule. Graduates of the center schools had the opportunity to visit the area high schools in the same manner. High school students were invited to center schools to discuss their major course of study, life at the high school in general and their own personal goals. Slides and films of local vocational and academic programs were also shown and discussed by students.

The purpose of the articulation and orientation program was to improve the quality of decision-making on the part of students and to make the transition from one school and program to another as smooth as possible.

As a process of counseling and articulation, either on an individual small group or large group basis, many students conducted a thorough and systematic evaluation of themselves and their entry into a vocational skill area at the vocational schools. With a closer look into their competencies and interests, through the career program, students were better able to ascertain the element of success and happiness in the vocational skill training provided for them by the Buffalo Vocational Schools.

As is well known, Buffalo has one of the finest vocational skill organizations perhaps in the entire United States. While other school districts are trying to set up skill centers in order to provide the vocational skill training that is dictated in component No. 2, Buffalo is already far and away ahead in that element. For example, if students are, by interest and ability, inclined to fall under the "Realistic" type as stated by Holland (see evaluation section) there are many opportunities in the related skill area that they could explore. For example, McKinley High School has skill training in many areas of the building trades such as carpentry, plumbing and sheet metal work; Burgard has automobile and aviation mechanics; McKinley, Emerson and Seneca have machine shop training in all stages of skill development; Seneca has electrical installation and repair and we could go on and on in stating these examples of the "Realistic Environment."

For those of the "Artistic" type we have McKinley's Graphic Arts Program as well as other comprehensive creative programs in music, writing, and art in all the academic schools. For those of the "Investigative" type we have Hutchinson Technical High School with its programs in Electrical and Mechanical Technology, Industrial Chemistry and Computer Science—all leading to career areas which require an individual to have a strong interest and ability in scientific and logical thought. All academic schools as well as all the other vocational high schools have programs that reach into higher levels of knowledge and achievement that require students to be of the investigative type, i.e. logical and scientific.

In addition to these vocational skill areas at the vocational high schools, the traditional academic high schools are now inserting specific skill areas in their curriculum so that their students can receive some entry type of skill training.

Having all these skill areas available makes it even more important that the element of component No. 4 "Decision-making" is not overlooked or under-played. A decision can be made without thought or consideration of the consequences of that decision or a decision can be made very carefully and with considerable thought as to the consequence of the action. This is where a source of strength has been found in the functioning of the career program. Through the career comprehensive programs set up at the centers and feeder schools and through the counselors' efforts, students were given more of an in-depth analysis for their desire to apply and attend a vocational skill center. Any program of infusion by a classroom teacher or a visit by or to an industry or business, hopefully helped these students do a better job in their decision-making process.

An example of developmental vocational skill training in a career curriculum was developed by a teacher of Industrial Arts at one of the center schools. He was involved in the credit course in "Careers" and he devised many skill awareness and training activities that would equip a youngster with some beginning competencies in the "Realistic" environment as well as a desire to continue his exploration of activities suitable to this area. A copy of this curriculum is included in this report.

Again, under the component of comprehensive programs of career development fall many examples of our "3C" model. All of these individual programs involved developmental decision-making processes in their operations.

The student operated school store (C2, C3) which entailed students planning and operating a school store, involved many learning and career education skills for students.

The procedure called for students to survey the school community (market) as to their supply needs. The counselor then arranged a field trip to a discount store to purchase the supplies. Project funds were provided for initial investment and were paid back at no interest. The students, with teacher and counselor assistance, set up the store in a classroom, anteroom, or hallway. Profits were reinvested in the store, paid out in wages or used to purchase stock in the store. Students learned how to handle money, make change and deal with the public. Profit and loss investment, cost, markups, stocks, discount, special sales and many other terms related to the business world were introduced in a very real way to students. Teachers stressed the knowledge and use of mathematics and English in the classroom as very real and necessary requirements for the operation of these stores.

On the secondary level a unique approach was the Career Education/Value Clarification course whereby 10th grade students were able to select this elective course for a semester (1/2 credit).

Exploration of the self-concept, attitudinal and value discussion and interaction, awareness of the cluster theory and development of basic skills connected with job and life style areas were a major part of the course offering. Interacting with role models from business and industry as well as related field trips were also an integral part of the course.

Another comprehensive program of career development in the early secondary area was the opportunity for 10th grade students to work at non-profit institutions in the community for two hours a day, five days a week with pay.

The counselor role was to orient students to employer expectations, seek out job sites and provide on-the-job guidance and counseling. Group and individual counseling was used as the technique for the latter.

This activity was the most real life experience provided throughout the project. As good as simulated school experiences are in the area of career guidance, nothing can replace the real on-the-job experiences.

Attitudes toward work, responsibilities, getting along with fellow employees and the employer, were all built into the program.

The Token Economy Banking Program was in effect another comprehensive program in the early secondary level. In order to develop a vocabulary and reading program begun by teachers at one of the projects' schools, the counselor initiated a token economy program based on the world of banking. School dollar bills worth one to two cents on the dollar, were awarded to students who knew the "words of the day". The dollars could be cashed or saved by the students.

A local bank was contacted for assistance in training students to be bank workers. Eventually each grade level had their own bank set up with interest rates established, a loan department and paid employees. In-service was provided by a bank employee in the Community Relations Department. This program provided the students with an initial understanding of the banking world, the flow and use of money and at the same time helped to improve vocabulary. It also included an ever on-going developmental process of decision-making and alternative solutions.

A program under way at another center school this year was the establishing and operation of a radio station which was completely manned by students who had the responsibility to program material, broadcast, and operate the equipment. Skill training and career exploration would certainly come under the second component.

The last component deemed important and necessary to career education includes efforts to recognize and capitalize on the significant ways in which the home and family structure serve as an influence on and are influenced by the occupational society. This is probably the component that received the least amount of attention due to the fact that it was a counselor based in-school program and not a home or community based program.

In both the elementary and early secondary level there was a movement to use as many of the parents and relatives as possible for role models in classroom size presentations. Letters, explaining the extent of their participation, were mailed out. There was limited response to the technique; however, it was quite successful when used. Another variation in using parents as role models was in requesting parents to take their child to work with them for a type of "shadow" experience. Again, there was only a limited response but when used it was quite successful in

giving the youngsters an added dimension in the world of work. It also provided an element of appreciation on the part of the child for their parents' role as a bread winner and the added communication between the two as to the degree of satsifaction and dissatisfaction that the parent had for their job.

As the results of the evaluation show, it is probably correct to state that the home environment is an important factor in determing what general area the children will go as far as career expectations and knowledge. For example, a great number of the parents are from the realistic type of employment, i.e., the type of work that is influenced by work with the hands and machinery and a good deal of physical exertion. The children in those families will tend to be influenced as to their desire for that type of work. This type of work is certainly necessary and rewarding to an individual but it does in itself give them a somewhat limited outlook as to their potential and interest in other broad areas of the world of work.

FIVE COMPONENTS - ANALYSIS

In looking back over the past three years and evaluating the methods and techniques that were used to implement the objectives of the program, we find that not all endeavors worked out as planned. Certainly, not all of the five components achieved 100 percent success. It was already stated that the last component concerning the home and family structure was very weak in its implementation and operation compared to the other four parts and I would like to analyze the five components one by one.

Component No. 1 - Infusion of career concepts into the existing curriculum.

While it was hoped that all teachers would feel this was the vehicle to stimulate interest and growth in their subject matter while stressing the career implications of their subject matter, it did not work out this way. Certainly, a number of teachers in both the elementary and early secondary schools did work with the counselor on a consultation basis in working out strategies of infusion for the subject area; this would include either stressing some career concepts in their subject lesson plan or by using some programmed materials either in written or audio-visual form. There was a greater percentage of teachers in the elementary area working with the infusion concept than on the secondary level; however, even those teachers on both levels who tried to implement this technique did it on a limited basis. Following the existing curriculum and making sure the students were prepared for the examinations were of primary concern for the teachers even though in in-service programs it was shown how both objectives (teaching the subject curriculum and implementing career objectives) could be synchronized into one operation. The curriculum guide of career activities which was a sampling of lesson plans and activities devised by teachers and counselors gives an idea of how successful this infusion component can be. However, even though career education blends in all the elements of a good educational system such as the developing of a positive self image and the

acquiring of a number of skills such as reading and mechanics, relatively few teachers will spend the time implementing strategies or activities unless career education concepts is specifically mentioned in their subject curriculum or final examinations. I believe that there has to be curriculum revision directed from the state to include the direct mention of career concepts and there must be direct references to "career questions" on the examinations in June.

I also believe that teacher education colleges on the undergraduate and graduate level have to have formal courses or career education theories and practical strategies so that new teachers or relatively new teachers will see the importance and necessity of helping their students, through a developmental program from kindergarten to graduation from high school, develop a more mature appreciation of the personal and social implications of becoming a worker and understanding specific tasks required for joining and maintaining employment.

Component No. 2 - Vocational skill training providing specific competencies for entry into the occupational world.

This component, as was explained previously, is one of the stronger areas of the Buffalo School System and was established many years ago. Additional vocational programs are being added in the academic high schools to provide occupational skill areas in all the high schools.

However, in the early secondary school career program specific occupational skill training in the form of basic manual skills were introduced or existing ones modified to fit a flexible approach in assessing and implementing motor tasks of basic competencies. This enterprise was limited in operation but very successful in output. At one center school it was the basis for one of the credit courses for 10th graders in career development and it centered on manipulative and thinking skills and how the awareness and exploration of such skills could lead into more advanced but basic vocational skill training. Ideally, if this approach could be utilized for all 8th and 9th graders and advanced but still basic skills added in the second year, the students involved would have an array of basic manipulative skills that would give them a better analysis of their interest and ability into career cluster areas that would require these skills. These cluster areas would include building trades, manufacturing, transportation, product repair, communication and certain areas in perhaps all of the clusters.

In addition to this actual opportunity for skill training, the group guidance technique developed through the career program enhanced the students' decision-making process in applying to the various programs at the vocational schools.

Another class receiving credit for the career course but housed in a Home Economics area began, during the course itself, to develop manipulative skills activities using the basic machines unique to that instructional unit. While not nearly as advanced as the industrial arts area, it was receiving a measure of success that would have continued. In fact, a

task oriented manual competency skill class with a mixture of activities on value clarification, interpersonal attitude strategies, informational type lessons on career opportunities, and in-depth programs of identification of one's abilities, personality, interests and attitudes is an ideal way to develop career programs. This was one of the most successful ventures in not only the vocational skill training components but the whole career development program.

Component No. 3 - Efforts of business, labor, and industry to contribute actively to the goals of career education.

This is probably one of the stronger elements of our career program since all the schools were actively engaged in having numerous role models from the world of work interact with the youngsters on not only their job role but the values and attitudes that play such a large and important role in their life style. We have previously mentioned on-site visits to business and industry and observational type of activities. However, even though we have had many representatives from business and industry which have reflected the cluster concept, they are not involved with the schools on any continuing basis. There have been some few exceptions to this. For example, at one center school a local savings bank was involved in a continuous simulated training session with a different group of students every two weeks. The bank not only provided an in-depth awareness of the business and office cluster careers but an exploration into such things as training techniques and the desired life style and values that lead from this type of work.

This is the type of effort that should be continuous on the part of business and industry and is not only up to them to contribute their time and effort but also important for the counselor and teachers in the career program to make the contacts and lay out a program that industry would willingly follow because they could see the necessity of it.

I feel this cooperative learning venture is the ideal way to acquaint students, especially in the early secondary level, with the many facets of the world of work. The students would not only gather facts about themselves and the world of work but develop realistic attitudes in regard to employment.

Working together, a series of learning units could be designed and adapted to individualized instruction, class group procedures, or a combination of the two. To extend their classroom learning, and to experience concepts and attitudes developed in a class situation, the students could be given the opportunity to spend one full day at the place of business. Students could select the department and choose one job in which they could observe and participate.

Not only would the students visit the plant, but employees visit the school. The primary purpose of the employees' visit would be to expand the students' awareness of the world of work. This would include discussions and reinforcement of principles taught in the learning units. In addition, a description of their own or other jobs could be reviewed. The key point in this idea is the continuity of the industry with one school. This adoptive procedure would probably mean that the business or industry would go all out in providing as much resources and man hours as necessary in order to give the students knowledge about the real world of work. Of course, there are many details to be worked out in a plan such as this but I do believe if there was representation from one or even more than one cluster and they worked with the school on a definite continuing basis the overall concepts of career education would be more easily attained and with greater efficiency.

Component No. 5 - Comprehensive programs of career development aimed at helping students in the decision-making process.

Many of the programs developed in the individual schools worked out very well insofar as it not only gave the youngsters a chance to become involved in a hands-on operation but they were constantly involved in some form of decision-making.

There was one type of program in this area that I believe should be further explained since it worked very well for the counselors who implemented it in the early secondary school. Through a series of day long or half-day group guidance activities stressing self-awareness, attitudes, values, and factual information, the groups of students who participated, received both a mini type of development program in career education as well as a systemized readiness for all future career education activities that they would engage in. Interaction of the students is a key ingredient in this process and if run properly the students realize there are many different values and opinions in life as there are different life styles and career choices in the real world.

The activities and strategies developed in this process can be used in any guidance situation and can provide a base for counselor activities even though there would not be a formalized career program in the school. The decision-making process is constantly being considered and reinforced because alternative forms of action and considerations are in motion due to the interaction between counselor and students and the students themselves.

As mentioned previously, the articulation program and decision-making process for the student's high school choice and subject choice benefited greater from this group guidance technique developed under the career program.

An area of concern for some counselors in the program was the lack of a measuring devise that could give an indication of an aptitude and ability level that would correspond to entry type positions in each of the fifteen clusters. In deciding one's future, one of the variables that each one of us have to be concerned with is our aptitude to undertake the tasks connected with that occupation. A number of counselors tried various indicators of success but could not come up with anything that would prove effective in helping students on a long-term decision-making process. Some indicator of ability and aptitude should be devised that brings into account the skills needed for as many of the fifteen clusters as possible. However, the test itself should be a maximum of thirty minutes with a low level of readibility. This measure could be used in group or individual counseling in helping the students get a more realistic picture of where they are and where they should be for the skills needed at sample entry type jobs. This indicator along with activities that bring into account personality and interest factors would be beneficial in the overall plan of the comprehensive career program.

Assistance in the actual decision-making process is a crucial aspect of the career development component of career education. Such assistance is a highly personalized matter that needs professional counseling. We have talked of the successful group counseling activities but even to a larger degree the individual counseling process was extremely successful in both the K-6 and early secondary program. The goal in counseling is to help the student make decisions based on reason, taking into account knowledge of self as well as information about educational and occupational requirements and opportunities. The goal of counseling is to improve the quality of the decisions that are made. Making good and effective decisions and implementing these decisions is a development process for the students. Our counselors have helped students realize that decisions are based on many factors including interest, ability, aptitude and personal values. Many of the counselors spend as much as 50 to 60 percent of their time in the individual counseling process and have achieved a high degree of success in the undertaking of this component of career education. This success is due to the ability and personality of our counseling staff and their high degree of professionalism in conducting our program. This is by far one of the most successful aspects of our entire program and could by itself make the three year program worthwhile and eventful.

Component No. 5 - Efforts to use the home and family structure in their influence with the occupational society.

This was perhaps the least effective component of our career program. In some cases we had parents serving on the advisory committees, acting as role models in class presentations, and as a contact for on-site visits or as a person to shadow, but for the most part and perhaps due to the fact that parent utilization was low on the priority list, this component was lacking in its effectiveness. However, since the goals of career education are seen as making work possible, meaningful and satisfying to each individual, the home and family structure should stand as an important and strong force for attaining attempts to reach that goal.

There are three major thrusts involved in the home and family component of career education. One is concerned with increasing knowledge among parents concerning home and family living. A second is concerned with changing possible negative attitudes on the part of parents as to the goals of career education. The third is concerned with active involvement of parents in the total career education program.

The teaching of family relationships both to parents and secondary school students should be a major aspect of any career program. At one of the center schools this was done in part by one of the teachers in the 10th grade credit course on "careers". A boy and girl who volunteered, became engaged, married and had a family. This was all in theory. The entire class participated in all the discussions that led the couple from one decision-making process to another. Values and life style were a major component of this marriage. Questions on job preferences, budget considerations and family upbringing were only a part of the entire life style package that was discussed in the class. This aspect of the career class became not only the most popular but the most valuable part in this learning experience and proved that family living and family relationships should be a part of the curriculum. The only sad feature of this is that it was done on a limited basis, in the third year of our program, and had not been carried over to other schools or classes. If we were able to continue the career program, this aspect of it would certainly have been enlarged and strengthened. Considering the current instability of the family structure, home and family living should be included in the knowledge to be transmitted to all students.

A second important aspect should be consumer education. This was touched on as part of the marriage in the career course. Again, this was done in a limited way but the potential growth was clearly there.

A third aspect is the teaching of work values in the home itself. The interdependence of workers on each other for successful production, the importance of cooperation, of specialization, of punctuality, of following directions, of accepting personal responsibility, and so on, are all necessary in the functioning of the home unit as well as the work unit. Again, there were limited discussions of this aspect in the career class.

The changing of parent attitude on career education was, as mentioned previously, an aspect that was not really touched on since there were too many other considerations of warranted priority. For example, there is a needed change in parent attitude toward vocational educational skills. Too many parents feel that success can only come from using one's head entirely, in their work, rather than with both one's hands and one's head. In other words success can only come from holding a college degree. This change in attitude requires an extensive amount of time and energy and was not on our list of priorities.

One aspect of the role of home and family in career education that was successful on a limited degree was the willingness of parents to cooperate by supplying information about their own jobs and acting as role models on tour guides. When done, this was very successful and proved that this resource holds a valuable potential in the attainment of career education goals.

STATISTICAL SUMMARY

It is difficult to estimate the number of students and teachers who were in some way affected by the career program in the past three years. Many were directly involved in the process over and over again while others may have participated in a very indirect and limited way. I feel it is rather safe to say though that all the youngsters in all the schools offering the career education program became aware in some way that their thinking of the future is an important aspect of going through school.

K-6 LEVEL:

Counseling (C1)

Group Counseling: Number of Groups - 270
Number of Students - 1,960
Individual Counseling: 14,460
Group Guidance: Group Demonstrations - 175, Students - 3,550
Number of On-going Group Guidance Programs - 50
Students - 2,100

Consultation (C2)

School Employment Service: Students - 2,582
Token Economy Store: Students - 215, Teachers - 15
Curriculum Development: Number of Teachers using material - 93
Number of Students exposed to material - 4,770
Expanded Curriculum-all forms: Students - 4,100

Coordination (C3)

Field Trips: 300
Resource People (Role Models): 322, Different Students - 18,900

EARLY SECONDARY LEVEL (7-10):

Counseling (C1)

Group Counseling: All day Career Exploratory Session (Holland Theory)
Number of Students processed - 900 8th Graders
Small Group Discussion: 475 9th Graders
(decision-making, self identity, etc.)
Vocational School Awareness: 2,300 8th and 9th Graders (class size groups)
Vocational School Small Group Session: 920 8th and 9th Graders
(decision-making process)
Individual Counseling: 875 (self referral or through participation in other activities)

Consultation (C2) - Academic and Non-academic areas

	No. of students
Art-Commercial art, related fields	245
I.A. - Careers in Manufacturing and Industry, Building Trades, Transportation	750
English - Careers related to subject	410
History - Careers related to subject	445
Mathematics - Careers related to subject	275
Science - Careers related to subject	465
Career Class - Credit course on career awareness and exploration	250
Home Economics - Careers in Home Economics	310
Business - Careers in Business and Office, Marketing	210

Coordination (C3) - Role Models

Over 400 resource people (role models) interacted with over 9,000 students in class size and larger group presentations. These role models represented all levels within the fifteen career cluster model.

Field Trips: Over 5,000 students were involved in field trips to over 100 differene institutions.

Career Week: Besides on-going role models interacting with students during the year, Career Weeks were held in many of the project schools. On-going activities with role models were scheduled every day of the Career Week. As many as 50 role models were invited during some of these weeks. At one project school, new to the career program this year, the career week they developed was aided by the cooperation of many of the academic teachers in providing extensive programs, using audio-visual materials and techniques of infusion in their lesson plans. This program was very successful and the total school population participated in it in one way or another. It also indicated to us that there can be counselors and teachers, who have been introduced to

to the concepts of career education through in-service programs, willing to work very diligently in the implementation and operation of a school-wide career program. In fact, approximately twelve schools (not officially in program) had successful career weeks this year. If one or more schools can be successful, others can do the same thing. It, of course, depends on the personnel in the school building. We are quite fortunate that many of the counselors in the Buffalo School System are enthusiastic and anxious to implement any type of program that will give their youngsters opportunities to grow in the decision-making process.

Articulation Programs: Counselors coordinated articulation programs for their respective incoming fifth/seventh graders and outgoing eight/ninth/tenth graders. It was arranged for project feeder school counselors to bring their graduates to the project center schools and spend a day with a "big brother", going through the day on the latter's schedule. Graduates of the center schools had the opportunity to visit the area high schools in the same manner.

Schools made use of peer group guidance by having older students "rap" with the incoming students on their perceptions of their school, careers they were preparing for, and a variety of other topics.

Number of students involved: 1,500, teachers - 38.

College Day: At one center school an introduction to college opportunities and programs was organized through the career program. Representatives from twelve local colleges were available for the entire 10th grade. The students had the opportunity to interact with one four-year and one two-year college representative. College life and career implications were two vital topics discussed in all sessions.

Number of students involved: 800, teachers - 24.

Other programs in the early secondary areas that helped large groups of students were:

School Employment Service: 240 students, 85 staff members.
Spanish Career Information Program: 180 students, 3 staff members.
Production Line (Industrial Department): 450 students, 18 staff members
Behavioral Modification Program (Reward Program in academic and special subject area): 1,200 students, number of awards - 90.
Curriculum Planning (Integration of career activities and resource material in the classroom): 3,200 students - 68 teachers.

Large Group Guidance: This activity usually preceded or followed a field trip by the class. The counselor would prepare students by going over verbally, and with a data sheet distributed to the students, what the student should look for, be aware of, etc. After the field trip, the counselor and/or teacher would discuss with the students their perceptions of the trip.

Number of students - 1,200, classes - 45.

The counselor, in effect, can play many different roles in the operation of the career program. Effective consultation (C2) with staff is the key element. The working relationship between teachers and counselors is crucial to the success of the project. This relationship is best effected by, first, the teacher observing the counselor as an active person who not only believes in developmental learning theory and career education but is highly visible coordinating activities (C3) and counseling children (C1). The latter behavior on the part of the counselor encourages the teacher to participate in the development of the project and consult (C2) with the counselor about planning and implementing career activities. The counselor in the career program has to be a self-starter in addition to being imaginative, resourceful and energetic in making the program an on-going success. If a counselor sits back and waits for things to happen or is content in being around for crisis situations, a career program in a school will fall flat on its face. Even if an activity or technique fails to excite a group of students, it still has merit because an effective counselor can always gain knowledge and insight from a mistake.

THIRD PARTY EVALUATION

An addendum to this final report will be a complete evaluation and statistical summary of the Career Education Project which was prepared by Dr. Thomas Frantz of the Counselor Education Department at the State University of New York at Buffalo.

I believe the evaluation procedure was quite effective in that it accomplished its three general objectives of evaluating changes in pupils' knowledge of occupational and vocational information, assessing the clarity, consistency, and reality of the pupils' vocational interest and generating information that would be useful to the teachers and counselors in conducting the program.

The evaluation was based on a theory of vocational interest and environment (Holland's Theory) which in itself gave the counselors a foundation to pursue various strategies and techniques in the implementation and operation of the project. This by itself was very effective because Holland's Theory of vocational development can be adapted very practically in the group counseling and classroom teaching situations. The awareness and exploration of the fifteen career cluster concept can readily proceed from the foundation of Holland's Theory.

The method of pre-test and post-test proved effective since it showed changes in pupils' opinions and knowledge over a period of the school year in each year that we used the evaluation process. There was not only an increase in occupational knowledge overall but there was increased interest in some groups of occupational areas and a decrease in others. This can only mean that there was some degree of thinking, analyzing, and decision-making concerning vocational interest even though the factor of consistency was hard to understand (see evaluation).

Another aspect of the evaluation report that I feel was excellent in its approach and procedure was the teacher evaluation procedure. Dr. Prantz observed on many occasions, career activities at the projects' schools. He observed group counseling activities, classroom situations, and resource people in action in order to better evaluate the students' reaction to the program. He found much enthusiasm and interest on the part of the vast majority of students. This was an excellent feature of the evaluation since interest and enthusiasm can not readily be seen from just data alone.

Finally, his approach in evaluating the teachers' reaction to the project was effective since it is all important that the staff feel the project is operational and is reaching its objectives. While all the faculty at each school was not approached with a questionnaire, a good percentage in each school was contacted. The results of this tabulation showed a majority of very positive comments concerning the project and especially about the counselor in charge.

I would say that the evaluation report was not only favorable in its comments about the project but that the methods used were comprehensive and practical.

CONCLUSIONS

Taking into account the total Career Education Project for the past three years, I feel that the project has met to a large degree the career and occupational development objectives that has been published by the National Assessment of Educational Progress. I use this publication as a guide in the assessing of our program since these objectives are all-inclusive in their comprehensive quality and since our program has implemented many specific programs to attain these objectives. Furthermore, the underlying philosophy that has guided our program since its inception has been one of formulating constructive and meaningful patterns of behavior regarding several developmental tasks including accepting responsibility, decision-making, interpersonal relationship, adaptability and tentative career self-identity.

In looking over a list of these specific objectives in summary form, I find we have met a large degree of success in attaining all of the objectives. Of course, we have not achieved 100 percent in reaching all of the objectives. This in itself is not possible. However,

I feel we have reached a satisfactory stage of developmentand in doing so have laid a groundwork for future career development programs in Buffalo.

I would like to briefly assess each of the objectives in relation to our project.

1.) Knowledge of characteristics and requirements of different courses and occupations. I feel our students can differentiate between many of the occupational clusters in terms of recognizing occupations in the same field, knowing the relationship between school curriculum and occupational families, knowing required major duties, abilities, and entry educational levels and understanding how personal values and work values are interrelated in choosing and working a career.

2.) Knowledge of relation of personal characteristics to occupational requirements. Students are now aware, and with some understanding how abilities, interests and values are related to potential career fields. They are also beginning to compare themselves and the career fields and recognizing their own deficiencies and attributes in relation to the career fields.

3.) Knowledge of relation of education to occupational fields. Students can better identify the different educational areas that are available in both immediate and the more distant future. They can tentatively assess what each offers them in terms of their possible vocational choice. They can demonstrate to some degree how knowledge and skills acquired in different subject matter areas relate to performing work roles.

4.) Possession of numerical skills through such projects as the Token Economy Store, School Banking project, etc. Students can better understand and use numerical skills which is a major prerequisite for life style and career field.

5.) Possession of communication skills. Students have demonstrated, both orally and in writing, how to perform a particular task in a career field of interest; reported on group career projects; completed applications for jobs; engaged in mock interviews;and engaged in discussions with role models and other students.

6.) Possession of manual-perceptual skills. Students have learned to use tools and equipment in Industrial Arts, Home Economics, Business and Art classes. They have attained a wide range of flexibility in manual perceptual skills as evidenced by the complete list of skill activities accompanying this report.

7.) Possession of information processing and decision-making skills. Students have made educational and vocational decisions in our program. They have learned to evaluate jobs as well as deciding on sequence of tasks to perform. They have learned to look at alternative factors and how to assess these factors in making decisions.

8.) Possession of interpersonal skills. Students can identify responsibilities, recognize the viewpoints of others, talk over differences and compromise when necessary to reach agreements and solutions.

9.) Possession of effective work habits. Students can better understand rules and regulations, maintain more self-control, work at tasks more efficiently and quickly.

10.) Possession of effective work habits. Students can better understand rules and regulations, maintain more self-control, work at tasks more efficiently and quickly.

11.) Possession of positive attitudes toward work. Students can understand the personal satisfaction that different workers receive from their jobs. They can recognize the accomplishments and contributions of others. They can identify the value of work and other activities that contribute to society and the individual.

Since the above objectives have been attained in some measure in all the schools served by the Career Education Project, I feel that the concepts of a career education program have permeated a good portion of the Buffalo School System mainly through the efforts of the counselors who have serviced the program. Through initiative and hard work in organizing and supervising career activities in their schools and through participating in-service programs for other counselors and teachers, I believe our career program has been an unqualified success.

SUMMARY - FINANCIAL REPORT
(Estimation Only)

According to calculations recorded in the Audit Department, as of mid-July, our porgram has spent approximately 98 percent of our budget. Since our program officially ends August 31, 1975, it is not possible to quote exact figures. However, any money not spent will probably fall under the following fund areas:

Custodial Services	JM5 - 1623 - 167
Staff Travel	JM5 - 2020 - 475
Evaluation - In-Service	JM5 - 2070 - 446
Consultant Fees	JM5 - 2810 - 446
Student Transportation	JM5 - 5540 - 476
Salary - Guidance Counselors	JM5 - 2810 - 153
Salary - Supervisor	JM5 - 2020 - 165

The office supplies budget will be used to pay for the publication of the Career Activities Guide which will be delivered to us in September.

Copies of the Guide will be sent to your office as soon as we receive them from the printer.

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Summary Evaluation

of

Career Education Project

for

Buffalo Public School System

From early autumn of 1972 through spring of 1975 a Career Education Project was conducted in twelve of the Buffalo Public Schools. These twelve schools participated in the Project during all three years of its existence. During the final year three schools were added to the Project. The Project was funded with federal funds and its major purpose was "to provide students with experience and knowledge that will serve as a basis upon which appropriate educational and occupational choices can be made at future major decision points." Two objectives were sought for each child: 1) "an ever more mature appreciation of the personal and social implications of becoming a worker and 2) an increased understanding of the specific tasks required for gaining and maintaining employment".

Rationale for Evaluation

Most project evaluations are empirical and hence their usefulness lies in the analysis of the actual data gathered. For the evaluation of the Career Education Project we decided to make the evaluation somewhat theoretically based; that is, to collect empirical data in the usual manner, but to be guided in what data to collect by a theory of vocational choice or development. Such an approach has the merits of normal empirical studies plus the advantages of adding to knowledge about the theory and of multiplying the usefulness of the data collected by studying not only its prima facie content; but studying the theoretical concepts generated from the data. For example, in Holland's theory of vocational choice (the theory employed

in this study) there is a concept called "homogeneity" which refers to the clarity or degree of differentiation of a person's vocational choice. Empirically, data are collected on each of Holland's six vocational interest factors; then in addition to being able to examine a person's vocational interests, we can study the person's degree of homogeneity because homogeneity is operationally defined by subtracting a person's lowest interest score from his highest interest score and comparing the result with normative table of homogeneity scores. Hence, by gathering data on only six factors of vocational interest, we are able to study other variables of importance because of the theory behind the data collected.

In conducting the evaluation we attempted to accomplish three general objectives. First, we wanted to evaluate any changes in pupils' knowledge of occupational and vocational information. Secondly, we hoped to assess the clarity, consistency, and reality of the pupils vocational interests. Thirdly, we wanted to generate information that would be useful to the teachers and counselors in conducting the program.

A Theory of Vocational Choice

The theory used as a basis for much of the data collection was Holland's Theory of Vocational Choice. Holland's theory was chosen for several reasons; it is the only theory of vocational choice for which has been developed an easily administered interest inventory enabling concepts in the theory to be measured, it has been widely used in research (tho mostly with high school seniors and college students), and it is a basically simple one which can be applied and understood by students, teachers, and counselors. Indeed since the evaluation of this Project began, some counselors at the junior high school level began to institute programs designed to enhance vocational development based on Holland's theory.

Holland's theory has been adequately outlined in many sources (e.g., Holland, 1959, 1966, 1973) so we will only summarize it briefly here by saying that Holland states that there are six general types of people and a corresponding six types of environments. Each person bears varifying degrees of resemblance to the six types of people and people working at a particular job tend to have personalities which resemble each other more than they resemble people working in other jobs. Thus each occupation, because of the similarity of the people in it, can be classified into one of the six basic types. The types are:

1) Realistic - outdoor, mechanical, traditionally masculine people; e.g., farmer, forester, TV repairman;

2) Investigative - scientific, logical, intellectual people, e.g., chemist, arithmetic teacher

3) Artistic - creative, fine arts type people; e.g., musician, journalist, interior decorator

4) Social - gregarious people interested in helping others; e.g., teachers, social workers;

5) Enterprising - status, success, and power oriented people; e.g., politician, salesman, lawyer;

6) Conventional - focused, structured, conservative followers; e.g., bank clerks, civil servants

A person's dominant personality type or area of vocational interest Holland calls one's "high point code" and a person's secondary personality type or area of vocational interst is called his "secondary code". Hence a woman who mainly wants to be a kindergarten teacher (Social occupation) but who also likes to write short stories and poetry (Artistic activities) has a Social high point code and an Artistic secondary code. [Through research conducted over the last 16 years Holland has classified nearly all common occupations into one of his six types].

Some of the above types are closely related to each other both logically and empirically as verified by correlational studies. Two types closely related to each other are called "consistent". The consistent types are as follows: Realistic is consistent with Conventional and Investigative; Investigative is consistent with Realistic and Artistic; Artistic is consistent with Investigative and Social; Social is consistent with Artistic and Enterprising; Enterprising is consistent with Social and Conventional; and Conventional is consistent with Enterprising and Realistic. According to the theory people are consistent if their high point code and secondary code are consistent.

Another concept used in the theory is homogeneity; that is, the degree to which a person's interests are homogeneous or clearly specified as opposed to having heterogeneous or diffuse and unclear interests. The more clearly a person's interests fits into one interest category to the relative exclusion of the other the more homogeneous that person is. Recently, Holland has used the term differentiation instead of homogeneity; but the meaning of the two terms is the same.

Procedures and Method of Evaluation

A pretest - posttest approach to evaluation was employed meaning that each subject serves as his own control group. This approach was chosen over the experimental group-control group design because of the practical and ethical difficulties of randomly assigning some subjects to treatment groups and having to exclude others. Additionally our approach enabled us to assess changes in pupils over the six month interval during which the students were studied.

Instrumentation

At both the elementary and junior high school levels it was decided to evaluate two general areas - knowledge about occupations or job awareness and occupational or vocational interests. Accordingly four separate instruments were developed in consultation with some of the counselors in the Project.

At the junior high level we constructed a 52 item test of knowledge about jobs. Eighteen of the 52 items dealt with students; knowledge of the data-people-things, framework for viewing occupations and ten items dealt with career ladder and job family notions. The remaining questions dealt with general occupational knowledge. At the elementary level we constructed a simple 25 item three response multiple choice test of job knowledge. Both tests were constructed to be of low item difficulty so that in addition to serving as a mechanism for evaluation, the pupils could have a sense of accomplishment since they would probably know the correct answers.

Occupational interest questionnaires similar to each other in format were developed for the elementary and junior high school level. These questionnaires consisted of four lists of 12 jobs each (three lists at the elementary level). Two of the twelve jobs in each list were from each of Holland's six vocational categories. Pupils were instructed to place an "L" beside the four jobs they would like to work at the most and a "D" beside the four jobs they would least like to work at. In addition subjects were asked to pick the four jobs out of each list which they felt they had the most ability to perform and to pick the two jobs out of each list that the students' felt were the most important and valuable to society. Scores

on each of Holland's six factors were tabulated on the interest measures, the ability measures, and the value to society measures. The interest scores were the ones of major concern in the evaluation of the Project.

All instruments were administered in the schools by the teachers and guidance counselors. Directions were read aloud at the elementary level. All scoring and data analysis was carried out by the third party evaluators. Initial testing was conducted in October and the final testing was completed during April.

Results of Elementary Level

Subjects

359 fourth and fifth graders (see Table 1) at ten elementary schools served as subjects for the evaluation at the elementary level. The pupils evaluated were chosen by the teachers and guidance counselors and are but a portion of the students who participated in the Project. At the junior high level 238 eighth and ninth graders at four schools were surveyed. A fifth junior high school participated in the Project and its students were pretested; but due to scheduling problems it was not possible to posttest the pupils in time to include them in the evaluation.

Summary of Results for Elementary Schools

As has been the case in the previous two years (see Table 12) of the Project the clearest and most consistent result of the Project seems to be an increase in occupational knowledge for pupils of both sexes and at each school (see Table 2). There are differences in the mean knowledge scores for the several schools ranging on the pretest from an average of 56 percent to 71 percent correct compared to a range of 59 percent correct to 84 percent correct on the posttest. There is no doubt that scores on the vocational

knowledge test increased significantly during the Project. (The overall increase was significant at the p _ .01 level).

Changes between pre and post testing on the six basic interest scales are presented in tables 3-8. For the current year the ranking of pupils' interests on the six scales for both boys and girls is the same as it has been in the two previous years. Boys consistently score highest on the Realistic scale followed in order by the Intellectual, Social, Enterprising, Artistic, and Conventional scales. Girls consistently score highest on the Social scale followed by the Artistic; Conventional, Enterprising, Intellectual and Realistic scales. It is apparent that the sexes express very different occupational interests. Indeed the correlation between sexes interest patterns is -.68 (using Spearman's rho); i.e. a negative correlation indicating a tendency for the occupations of most interest to boys to be of least interest to girls and vice versa.

During the 1974-75 year students of both sexes evidenced increased interest in Realistic, Investigative, and, to a lesser extent, Conventional occupations. On the Artistic scale girls showed significantly increased interest; but boys did not. Scores on the Social and Enterprising scales seemed to decrease slightly; but not significantly, during the year.

The specific interest patterns and changes for a given school can be ascertained by examination of tables 3-8. For example school #28 shows a pattern of change different from the norm. Pupils at this school showed relatively large increased interest in Artistic, Social and Enterprising occupations while demonstrating decreased interest in Realistic, Investigative, and Conventional occupations.

Over the three year period of the Project the most stable changes in the interest scales were a consistent increase in Artistic scores for pupils

of both sexes and a consistent decrease in Social scores for girls, but not boys.

In examining the homogeneity scores (homogeneity you'll recall represents the clarity of a person's interests) some interesting results appeared (see Table 9). Boys clearly increased in homogeneity while girls evidenced an even larger decrease. One could speculate that girls occupational stereotypes are broken down somewhat upon exposure to new vocational information and exploration of their own vocational interests; while boys may have less unlearning to do and may get their previous preferences clarified a bit.

Another interesting finding is that whatever occurred to effect homogeneity scores, it occurred differentially at the several schools; e.g. schools 41 and 28 showed large increases in homogeneity, schools 33, 51, 60, and 79 showed slight increases, but schools 4, 6, 37 and 56 showed large decreases in homogeneity.

Consistency represents the extent to which a person's main vocational interests are in compatible and related fields. Percentages of consistent pupils at each school and for each sex are shown in table 10. It is interesting to compare consistency and homogeneity. During the period of the Project boys became much more consistent and homogeneous while girls became less so. Of the six schools whose pupils increased in homogeneity five also increased their consistency from pre to post testing and of the four schools whose pupils decreased in homogeneity, three also showed a decrease in consistency. Apparently a pupil who has a relatively well differentiated and clear occupational choice is also likely to evidence a pattern of interests that are compatible with each other.

In addition to measures of vocational interest and knowledge pupils were given a list of occupations and asked to indicate which ones were of

most value or worth to society. In table 11 the changes on these "value to society" scales are reported. It seems that during the course of the Project pupil's opinions about the importance of Conventional, Enterprising, and Social occupations decreased while there was some tendency for Investigative occupations to be viewed as more important.

Conclusions

A very general summary of the evaluation results would include three main points. First and foremost, in each of the three years of the Project, pupils of both sexes and all schools seemed to become much more knowledgeable about vocations and specific jobs. Second there was a clear change in students degree of interest in Artistic occupations during the tenure of the Project. Third, apparently pupils come to think during the course of the Project that Investigative occupations are of greater importance and Conventional occupations of less importance that they thought at the start of the school year.

Results at Junior High Level

Pupils of both sexes and at each of the schools showed a significant increase in knowledge about vocations during the course of the Project. The pre and posttest means for boys and girls and for each school are shown in table 13. The results for the 1974-75 year in general parallel those for the previous two years of the Project in that pupils vocational knowledge scores apparently went up every year. One would expect such a finding considering that the purpose of the Project was, among other things, to improve students knowledge about the world of work. It should be reassuring to have this expectation confirmed.

Means on the pre and posttest for boys, girls and each school on the six basic interest scales are contained in tables 14-19. The clearest

results were that pupils of both sexes and at each school indicated increased interest in Artistic vocations. This increased interest in Artistic occupations occurred in the two previous years of the Project and also occurred the elementary level. It is interesting to note that fewer parents work in Artistic occupations than any other type of job. Only three parents out of the total of 462 parents of junior high pupils worked in Artistic jobs. Apparently pupils know so little about Artistic jobs that what knowledge they learn about such occupations leads them to be more interested in Artistic vocations at the end of the school year than they were at the beginning.

Incidentally, with respect to the jobs of the parents of the subjects of the evaluation, 83 percent of the fathers are employed in Realistic occupations. The next most populous category is Conventional with only six percent. For the mothers, 77 percent were classified as having Social occupations (many as housewives) while nine percent worked in Conventional and Realistic jobs.

Another trend noted in interest scores over the year was a decreased interest in Conventional vocations by pupils of both sexes and at three of the four schools. A diminished interest in Conventional jobs occurred in each of the two prior years of the Project and would appear to be a reliable occurrance. No changes of any consequence took place on the other four interest scales or on the measure of homogeneity or certainty of vocational choice (see table 20).

Table 21 contains the percentage of consistent pupils of each sex and at each school on both pre and posttesting. What seems apparent is that during the Project boys become more consistent while girls become less consistent and that there are very different trends among the schools

with pupils at two schools becoming more consistent and pupils at the other two schools becoming less so. The differing results among the schools are hard to account for; but that boys become more consistent while girls become less so is clear. Previous year's results were not similar in this regard, though the findings at the elementary level were similar.

During the school year pupils apparently came to feel that Social occupations were of more importance to society and that Realistic jobs were of less value. These trends also appeared in the previous year of the Project. The pre and posttest means on the six "value to society" scales are shown in table 22. No changes of any scope occurred on the other four scales or on the ability scales (see table 23). That is, pupils apparently didn't alter significantly their self perceptions of their own vocational abilities during the Project.

It is interesting to note that when the magnitude of the scores on the six interest scales and the six ability scales are compared, they correlate very highly with each other (Spearman's rho = .94). One might conclude that there is a tendency for students to feel they have ability in vocations they're interested in; or conversely, they have interest in jobs in which they think they have some skill. The correlation between ability and interest for the 1973-74 data was also .94.

Major Conclusions at Junior High Level

One, pupils show a significant increase in vocational knowledge during the course of the Project. Two, students become more interested in Artistic occupations and less interested in Conventional ones. Three, boys become more consistent and girls become less consistent during the Project. Four, there was a high correlation between pupils' self-perceived ability and their vocational interest.

Teachers Evaluation

In addition to surveying pupils with pre and post tests to get some indication of their reaction to the Career Education Project, we also distributed an open ended questionnaire to some of the teachers who were effected by the Project. In so doing we hoped to learn how the teachers felt about the importance or effects of the Project. We asked each teacher questions: the extent to which he/she was involved with the Project, their assessment of the projects impact on students, the extent to which the Project was accepted by the faculty and staff, and what they felt were the most and least beneficial aspects of the Project. Six principals returned questionnaires and 92 teachers turned in answers to the questionnaire.

In examining the 98 questionnaires we found only five faculty members who commented critically on the Project. The remarks critical of the Project are presented below. The list includes all the comments of a negative or pessimistic tone.

a. "The student's reaction was lukewarm. For my students in grade 6, the material available was too technical. The content was over their head."

b. "The program was not that well publicized".

c. "The program included too much. It "needed too much outside help".

d. The program "does present a problem to the classroom teacher. Children find too many excuses to visit the guidance office. When a teacher objects it lessens the teacher authority".

e. "The faculty isn't overwhelmed but will accept the Career Ed program willingly provided it's an integral part of the curriculum".

Most of all the respondents had quite positive comments to make about the Project. A very small sample of such comments appear below:

a. "Many students reported that their careers class was the most interesting, relevant, and worthwhile course they took".

b. "I like most the way the program is presented. It is flexible enough to encompass and supplement all school activities".

c. "My assessment of the program is that it is an important and valuable part of the school's success with the students, faculty, and the community".

d. "The children enjoyed the program immensely. Even parents volunteered their services to talk to the children about their jobs".

e. "It's given them a good idea of the different types of work people do and an idea of the training necessary for some jobs".

f. "Students seemed to have increased their awareness of their emotions, capabilities and talents...".

g. "Excellent and should be continued. Absolutely no complaints. Our program could easily serve as a model for others".

h. "The students appear to like the program...and volunteer to go even on their own time."

i. "I think the program is great. It stimulates discussion both on a student and faculty level".

j. "I like the program because it gives the children a feeling of success while learning a skill needed in the real world".

k. "I feel anyone who has not been active in this program just hasn't involved himself enough to experience how much it could help his children and the classroom".

l. "The program, particularly in our socio-economic area, has made the children aware of careers which they haven't been exposed to or even thought of".

m. "I have noticed much social growth in my children thanks to career education projects. They are more aware of the world around them and friendlier toward each other".

The above comments relate to the "program"; but by far the greatest number of positive comments were about the counselor. Most faculty identified the Career Education Project extremely closely with the counselor. To most, the counselor was the heart of the Project and the lauditory remarks of the teachers were mostly in praise of the counselor and his/her efforts.

In addition to surveying pupils and teachers involved with the Project we visited schools to observe first hand how the counselors were implementing the Project and how the pupils seemed to be responding to the activities of the Project.

We encountered a variety of activities which included such things as: a. an employment service offering such jobs as reading tutor, library helper, messenger, nurse helper, etc. where students filled out job applications, were interviewed, trained, and evaluated on their work; b., use of movies relating to different jobs followed by counselor led discussions of different aspects and ideas about the job; c., growing a wide variety of plants in a unit combining science with floral and nursery occupations, and children putting on puppet shows in a puppet theater to play the roles involved in certain jobs., d. writing vocational autobiographies starting with their parents and grandparents, discussing their hobbies, jobs around the house, and interests, and concluding with the occupation they are currently "expecting" to enter; e. use of the newspaper want-ad section to learn about categories skill and educational prerequisites, wages and salaries, hours, working conditions, and availability, etc. of certain jobs, f. group counseling session designed to help pupils get in touch with their feelings out of which later might emerge increased vocational awareness; g. group guidance sessions focused on looking at and rethinking sex roles and stereotypes in vocations; h., integrating vocational issues into the curriculum through a very popular wood and metal shop class for girls where theory and practice were combined by an enthusiastic teacher; and i. pupils making actual film strips of their vocational background and future, hence learning about film-making and projectors, film, tapes, and tape recorders while becoming more aware of their vocational lives.

The interest and enthusiasm of the students was readily apparent especially in activities where they were participating. For example, I would say that showing films, though useful, is the least stimulating activity to the students that I observed.

More than the students interest and enthusiasm however, I think that the most clear and predominant finding, though a subjective one, from the school visit is that the degree of success achieved through the Project is almost entirely a function of the personnel, teacher or counselor, involved. The materials, films, publications, etc. are nice and can make a counselor or teacher's job easier. On the other hand, good materials can enable a teacher or counselor to "hide out" and become lazy by assuming that the materials will do the work.

On the basis of my observations I would argue for putting money into good counselors and teachers because they are the program. If they're good, you'll have a quality program and if not you won't. The teacher questionnaires bore this out. Additionally, a colleague of mine at the University of Nebraska, who has been evaluating Career Education Projects told me he's come to the same conclusion. I suppose such a conclusion is not at all surprising; though we both agreed on a more "sticky" conclusion, namely that in-service training and supplying a number of ideas and materials really won't make a poor or average counselor or teacher into a good one. It's my personal view that good teachers and counselors are more apt to be born than made, though I doubt that enrichment programs do any harm and do help people do a little better.

If the above conclusion is anywhere near accurate, then we should probably be putting our efforts into developing better hiring and screening methods; that is, work on prevention rather than cures.

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Table I

Number of Pupils Pre and Posttested - 1974-75

School	Number Posttested 1974-75	1973-74	1972-73
Southside	76	87	69
Clinton	-	36	76
West Hertel	77	72	93
Fillmore	58	--	--
P.S. 67 (Jr. H.S.)	27	--	--
P.S. 56	35	--	--
P.S. 41	36	36	24
P.S. 28	42	36	36
P.S. 4	33	26	25
P.S. 37	31	37	23
P.S. 51	38	38	41
P.S. 60	33	38	36
P.S. 33	38	40	34
P.S. 6	36	67	37
P.S. 79	37	35	34
Total Jr. H.S.	238	195	238
Total Elem.	359	353	290
Grand Total	597	548	528

Table 2

Knowledge Pre and Posttest Scores

Group	Pretest Mean	Posttest Mean
overall	15.9	18.3
boys	16.7	18.8
girls	15.2	17.9
P.S. 56	17.5	18.1
P.S. 41	15.5	17.9
P.S. 28	14.9	19.7
P.S. 4	14.9	17.6
P.S. 37	14.0	14.9
P.S. 51	15.4	17.1
P.S. 60	16.6	20.9
P.S. 33	17.9	19.5
P.S. 6	15.9	18.1
P.S. 79	15.5	18.4

Table 3

Mean Realistic Interest Scores

Group	Pretest Mean	Posttest Mean
overall	8.3	9.0
boys	11.7	12.2
girls	5.1	5.8
P.S. 56	7.7	8.4
P.S. 41	8.8	10.2
P.S. 28	10.4	9.8
P.S. 4	8.0	7.6
P.S. 37	6.0	6.6
P.S. 51	9.2	10.4
P.S. 60	7.5	7.5
P.S. 33	9.8	10.4
P.S. 6	5.3	5.6
P.S. 79	8.4	9.9

Table 4

Mean Investigative Interest Scores

Group	Pretest Mean	Posttest Mean
overall	7.8	8.5
boys	9.3.	9.7
girls	6.6	7.1
P.S. 56	10.7	9.9
P.S. 41	7.1	8.5
P.S. 28	8.2	7.8
P.S. 4	7.7	8.2
P.S. 37	7.2	8.0
P.S. 51	6.8	7.2
P.S. 60	8.6	8.8
P.S. 33	8.3	9.1
P.S. 6	5.6	7.0
P.S. 79	8.3	8.6

Table 5

Mean Artistic Interest Scores

Group	Pretest Mean	Posttest Mean
overall	8.9	9.7
boys	7.1	7.2
girls	10.2	10.8
P.S. 56	9.1	9.9
P.S. 41	9.4	8.3
P.S. 28	8.2	9.3
P.S. 4	8.9	8.8
P.S. 37	9.1	10.5
P.S. 51	8.7	9.1
P.S. 60	8.8	9.3
P.S. 33	8.7	8.0
P.S. 6	8.7	8.8
P.S. 79	8.3	9.5

Table 6

Mean Social Interest Scores

Group	Pretest Mean	Posttest Mean
overall	11.2	11.0
boys	9.1	8.9
girls	13.3	12.6
P.S. 56	9.9	11.7
P.S. 41	12.2	10.6
P.S. 28	9.9	10.6
P.S. 4	11.5	10.5
P.S. 37	13.1	12.0
P.S. 51	11.5	10.4
P.S. 60	11.4	10.8
P.S. 33	10.0	9.9
P.S. 6	12.3	12.1
P.S. 79	11.7	9.8

Table 7

Mean Enterprising Interest Scores

Group	Pretest Mean	Posttest Mean
overall	8.0	8.3
boys	8.6	8.8
girls	7.2	7.3
P.S. 56	8.6	8.8
P.S. 41.	7.8	6.9
P.S. 28	7.7	8.2
P.S. 4	7.8	9.3
P.S. 37	8.3	7.4
P.S. 51	7.7	7.1
P.S. 60	7.4	7.3
P.S. 33	7.3	8.3
P.S. 6	9.1	9.4
P.S. 79	7.2	7.2

Table 8

Mean Conventional Interest Scores

Group	Pretest Mean	Posttest Mean
overall	7.6	8.2
boys	6.0	6.3
girls	9.1	9.5
P.S. 56	5.7	7.5
P.S. 41	6.9	7.3
P.S. 28	7.4	6.4
P.S. 4	8.1	8.1
P.S. 37	7.7	8.7
P.S. 51	7.3	7.4
P.S. 60	7.1	9.9
P.S. 33	7.7	6.8
P.S. 6	10.0	9.4
P.S. 79	8.2	8.6

Table 9

Mean Homogeneity Scores

Group	Prestest Mean	Posttest Mean
overall	15.1	15.1
boys	14.4	15.3
girls	15.9	14.8
P.S. 56	15.4	13.6
P.S. 41	13.4	15.0
P.S. 28	14.1	15.2
P.S. 4	14.9	13.3
P.S. 37	15.3	13.8
P.S. 51	16.8	17.2
P.S. 60	15.1	15.3
P.S. 33	15.8	16.2
P.S. 6	16.8	14.8
P.S. 79	14.5	14.8

Table 10

Pre and Posttest Percentages of Consistent Pupils by Sex and School

Group	Pretest Percent	Posttest Percent
overall	44.6	48.0
boys	42.9	51.6
girls	45.9	44.7
P.S. 56	44.0	41.3
P.S. 41	45.6	50.4
P.S. 28	50.1	48.0
P.S. 4	35.2	50.9
P.S. 37	51.9	48.9
P.S. 51	36.0	40.5
P.S. 60	38.8	60.1
P.S. 33	53.7	47.2
P.S. 6	44.2	36.0
P.S. 79	43.0	52.5

Table 11

F-Values and Pre and Posttest Mean

"Value to Society" Interest Scores on the Six Scales

(Elementary Schools)

	Realistic	Investigative	Artistic	Social	Enterprising	Conventional
Pretest Mean	1.23	1.31	.21	1.21	1.31	.68
Posttest Mean	1.25	1.40	.18	1.09	1.17	.54
F-Value	.08	1.62	1.09	3.19	3.86	5.88
Significance Level	.77	.20	.30	.07	.05	.02

Table 12

Summary of Three Year Pre-Posttest Changes

on the Six Interest Scales and the Knowledge Scale:

Elementary School Level

	Overall		Boys		Girls	
Realistic	Pre	Post	Pre	Post	Pre	Post
1972-73	7.7	7.5	11.7	10.9	3.9	4.3
1973-74	7.4	7.3	10.4	10.5	4.6	4.1
1974-75	8.3	9.0	11.7	12.2	5.1	5.8
Investigative						
1972-73	8.1	7.9	9.3	9.4	7.0	6.5
1973-74	8.1	8.1	9.1	8.8	7.1	7.3
1974-75	7.8	8.5	9.3	9.7	6.6	7.1
Artistic						
1972-73	9.3	9.5	7.7	8.7	10.7	10.2
1973-74	8.8	9.4	7.4	8.0	10.2	10.8
1974-75	8.9	9.7	7.1	7.2	10.2	10.8
Social						
1972-73	10.6	10.7	8.3	9.2	12.8	12.2
1973-74	11.5	11.8	9.2	10.0	13.7	13.6
1974-75	11.2	11.0	9.1	8.9	13.3	12.6
Enterprising						
1972-73	7.7	8.6	9.1	9.1	6.4	8.1
1973-74	7.9	7.6	8.4	8.4	7.4	6.9
1974-75	8.0	8.3	8.6	8.8	7.2	7.3

(Table 12 cont.)

	Overall		Boys		Girls	
Conventional	Pre	Post	Pre	Post	Pre	Post
1972-73	8.3	7.9	6.5	6.5	9.9	9.3
1973-74	7.8	7.9	6.5	6.2	9.0	9.5
1974-75	7.6	8.2	6.0	6.3	9.1	9.5
Knowledge						
1972-73	15.5	17.2	15.5	17.5	15.5	16.9
1973-74	15.0	17.4	15.3	17.2	14.8	17.6
1974-75	15.9	18.3	16.7	18.8	15.2	17.9

Table 13

Occupational Knowledge Pre and Posttest Means

Group	Pretest Mean	Posttest Mean
overall	40.5	43.5
boys	40.2	43.2
girls	40.7	43.8
West Hertel	41.3	43.9
Southside	41.2	43.4
Fillmore	39.4	42.0
P.S. 67	38.3	46.1

Table 14

Mean Realistic Interest Scores

Group	Pretest Mean	Posttest Mean
overall	11.2	11.1
boys	14.5	14.7
girls	8.2	8.5
West Hertel	11.4	11.8
Southside	11.4	12.2
Fillmore	10.7	10.8
P.S. 67	10.7	11.3

Table 15

Mean Investigative Interest Scores

Group	Pretest Mean	Posttest Mean
overall	11.1	10.8
boys	11.8	11.3
girls	10.3	10.4
West Hertel	12.7	11.8
Southside	10.2	9.7
Fillmore	11.1	11.4
P.S. 67	9.3	9.7

Table 16

Mean Artistic Interest Scores

Group	Pretest Mean	Posttest Mean
overall	10.6	11.0
boys	9.5	10.1
girls	11.6	12.2
West Hertel	9.8	10.9
Southside	11.2	11.5
Fillmore	10.4	11.3
P.S. 67	11.6	11.7

Table 17

Mean Social Interest Scores

Group	Pretest Mean	Posttest Mean
overall	12.6	12.7
boys	10.2	10.2
girls	15.1	15.3
West Hertel	12.6	12.4
Southside	12.6	13.5
Fillmore	13.6	12.9
P.S. 67	11.8	13.6

Table 18

Mean Enterprising Interest Scores

Group	Pretest Mean	Posttest Mean
overall	11.3	11.2
boys	12.6	12.3
girls	10.1	10.2
West Hertel	10.9	11.2
Southside	11.9	10.8
Fillmore	11.1	11.3
P.S. 67	11.3	10.9

Table 19

Mean Conventional Interest Scores

Group	Pretest Mean	Posttest Mean
overall	10.3	9.8
boys	8.7	8.5
girls	11.8	10.8
West Hertel	10.5	9.8
Southside	9.8	9.3
Fillmore	10.3	11.8
P.S. 67	11.2	9.2

Table 20

Mean Homogeneity Scores

Group	Pretest Mean	Posttest Mean
overall	18.2	17.6
boys	18.2	17.6
girls	18.1	17.9
West Hertel	18.8	17.7
Southside	17.3	18.1
Fillmore	18.9	18.5
P.S. 67	16.8	15.2

Table 21

Pre and Posttest Consistency Percentages by Sex and School

Group	Pretest Percent	Posttest Percent
overall	39.5	39.8
boys	36.8	45.3
girls	42.5	34.3
West Hertel	46.5	32.9
Southside	29.7	43.0
Fillmore	43.2	35.4
P.S. 67	37.9	42.1

Table 22

F-Values and Pre and Posttest

"Value to Society" Means on Six Vocational Scales

	Realistic	Investigative	Artistic	Social	Enterprising	Conventional
Pretest Mean	1.25	2.46	.37	1.80	1.32	.53
Posttest Mean	1.00	2.50	.36	2.06	1.26	.47
F-value	5.72	.09	.01	5.06	.36	.60
Significance Level	.02	.77	.95	.03	.55	.44

Table 23

	Realistic	Investigative	Artistic	Social	Enterprising	Conventional
Pretest Mean	2.69	2.31	2.34	2.74	2.40	2.11
Posttest Mean	2.58	2.15	2.31	2.76	2.24	1.87
F-Value	.44	1.00	.06	.02	1.38	2.40
Significance Level	.51	.32	.81	.90	.24	.12

Table 24

Summary of Three Year Pre-Posttest Changes on the

Six Interest Scales and Knowledge Scale:

Junior High Level

	Overall		Boys		Girls	
Realistic	Pre	Post	Pre	Post	Pre	Post
1972-73	10.3	10.0	13.4	12.9	8.3	8.2
1973-74	11.3	11.7	14.9	15.1	8.8	9.3
1974-75	11.2	11.1	14.5	14.7	8.2	8.5
Investigative						
1972-73	11.7	11.1	12.2	11.5	11.2	11.6
1973-74	10.1	9.5	10.8	10.1	9.7	8.1
1974-75	11.1	10.8	11.8	11.3	10.3	10.4
Artistic						
1972-73	10.6	11.0	9.3	9.9	11.4	11.8
1973-74	11.2	12.1	8.9	10.1	12.7	13.4
1974-75	10.6	11.0	9.5	10.1	11.6	12.2
Social						
1972-73	13.5	13.3	10.2	10.2	15.5	15.3
1973-74	12.7	12.8	10.1	10.5	14.6	14.4
1974-75	12.6	12.7	10.2	10.2	15.1	15.3
Enterprising						
1972-73	10.2	10.9	11.7	11.6	9.1	8.3
1973-74	11.6	11.3	13.2	12.7	10.4	10.3
1974-75	11.3	11.2	12.6	12.3	10.1	10.2

(Table 24 Cont.)

	Overall		Boys		Girls	
Conventional	Pre	Post	Pre	Post	Pre	Post
1972-73	10.6	9.9	8.4	8.8	11.8	10.8
1973-74	10.5	9.8	9.3	8.3	11.3	10.8
1974-75	10.3	9.8	8.7	8.5	11.8	10.8
Knowledge						
1972-73	35.7	39.7	31.9	38.0	38.1	40.2
1973-74	40.9	39.6	41.2	38.6	40.7	41.5
1974-75	40.5	43.5	40.2	43.2	40.7	43.8